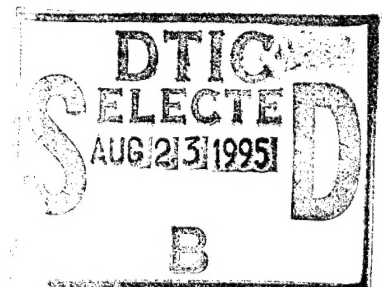


1. Report Security Classification: UNCLASSIFIED			
2. Security Classification Authority:			
3. Declassification/Downgrading Schedule: DISTRIBUTION STATEMENT A:			
4. Distribution/Availability of Report: APPROVED FOR PUBLIC RELEASE: DISTRIBUTION IS UNLIMITED			
5. Name of Performing Organization: Joint Military Operations Department			
6. Office Symbol: 1C		7. Address: Naval War College, 686 Cushing Rd., Newport, RI 02841-5010	
8. Title (Include Security Classification): THE REVOLUTION IN MILITARY AFFAIRS AND OPERATIONAL MANEUVER FROM THE SEA (U)			
9. Personal Authors: Huston, James V. LtCol, USMC			
10. Type of Report: Final		11. Date of Report: 16 MAY 1995	
12. Page Count: 21			
13. Supplementary Notation: A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Joint Military Operations Department. The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.			
14. Ten key words that relate to your paper: OPERATIONAL MANEUVER SEA REVOLUTION MILITARY AFFAIRS NAVAL EXPEDITIONARY FORCE			
15. Abstract: RMAs consist of technological advances, operational innovation, and organizational adaptation which combine to transition to a new form of warfare. OMFTS is a new concept which applies the principles of maneuver warfare to maritime power projection. This paper asks whether OMFTS is an appropriate concept for exploiting new technology, what changes need to be made, organizational implications, and recommendations for implementation. With a few changes, OMFTS can leverage the new technology associate with RMA for Naval operations. Combined with CWC and Battlespace Dominance, OMFTS can provide a compelling vision for employment of Naval Forces.			
16. Distribution / Availability of Abstract:	Unclassified	Same As Rpt	DTIC Users
18. Abstract Security Classification: UNCLASSIFIED			
19. Name of Responsible Individual: Chairman, Joint Military Operations Department			
20. Telephone: (401) 841-3414/4120		21. Office Symbol: 1C	

Security Classification of This Page UNCLASSIFIED

DATA QUALITY INSPECTION



NAVAL WAR COLLEGE
Newport, R.I.

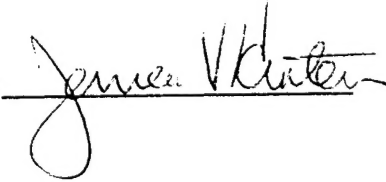
THE REVOLUTION IN MILITARY AFFAIRS
AND
OPERATIONAL MANEUVER FROM THE SEA

BY

JAMES V. HUSTON
LIEUTENANT COLONEL, U.S. MARINE CORPS

A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of National Security Decision Making.

The contents of this paper reflect my own personal view and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature: 

16 May, 1995
JUNE, 1995

Paper directed by Captain D. Watson
Chairman, Joint Military Operations Department

19950822 129

Abstract of

THE REVOLUTION IN MILITARY AFFAIRS AND
OPERATIONAL MANEUVER FROM THE SEA

A Revolution in Military Affairs consists of technological advances, operational innovation, and organizational adaptation, all of which combine to transition to a new form of warfare. While there is debate on whether we are experiencing an RMA, there is no doubt that there are dramatic changes taking place that we need look at new ways of coping with. Operational Maneuver from the Sea is a new concept which applies the principles of maneuver warfare to maritime power projection. With a few changes, OMFTS is an appropriate concept for leveraging new technologies and employing new organizations like Naval Expeditionary Forces in what may be new forms of warfare emerging from a RMA. While embedded in policy statements at the highest levels of the Department of the Navy, OMFTS has yet to be implemented. The concepts of Composite Warfare Commander and Battlespace Dominance should be folded into OMFTS to provide a compelling vision for the future employment of Naval forces.

Accession Ver	
DTIC TAB	<input checked="checked" type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	<input type="checkbox"/>
By	
Distribution	
Availability Codes	
Dist	Avail and/or Special
A-1	

Introduction

The subject of a Revolution in Military Affairs (RMA) has become a much-discussed and debated topic in defense related circles, with a proliferation of studies, conferences, papers, briefings, articles and war-gaming exercises. As of yet, there is not a clear vision or consensus within the Department of Defense on whether an RMA is in the offing or what it will bring. It is certain, however, that an RMA is a development of fundamental importance to DOD and that we must be prepared to take advantage of it.

While there is also no agreement on a specific definition of an RMA, there is general consensus that it is composed of three elements which are present in varying degrees. These are technological advances, operational innovation, and organizational adaptation, which all combine in a transition to a new form of warfare, rendering existing methods of conducting warfare obsolete.¹ Profound change in warfare usually takes place only when new concepts of operations fully exploit the potential of new technologies, often requiring or resulting in new military organizations.²

Operational Maneuver From the Sea (OMFTS) is a new concept for the employment of Naval Forces which applies the principles of maneuver warfare to the projection of maritime power ashore. This paper will explore the questions of whether OMFTS is an appropriate concept for exploiting the technological advances taking place, what changes to the concept may need to be made, organizational implications, and recommendations for implementation. The limited scope of this

paper does not allow for examination into all the extremely interesting discussions on OOTW, Information Warfare, and non-state conflict that are included in the broad category of RMA. Nevertheless, a focus on maritime power projection is appropriate since it is likely to remain a key element of deterrence, crisis response, and war for the foreseeable future. Since operational maneuver has become a central concept for its employment,³ an examination of the relevance of OMFTS to a potential RMA is therefore important to an understanding of the future employment of naval forces.

Revolution in Military Affairs

There are generally two views of the way in which warfare might change as a result of RMA.⁴ One is that a revolution in information, sensing, and precision strike technologies will allow military forces to conduct operations with an unprecedented degree of precision. An operational view of this capability would be one which enables a parallel series of synchronized, integrated operations conducted at high tempo, with high lethality and high mobility throughout the depth and extent of the theater, intended to force the rapid collapse of the enemy's military power and of his will.⁵

Admiral Owens, Vice Chairman of the Joint Chiefs of Staff, offers a view of advances in battlespace awareness, advanced C4I2, and precision force use which will form a "system of systems," revolutionizing not only the military capabilities but the jointness of U.S. forces.⁶ The controversy in his view lies in proposals to reduce current forces and programs which will become "redundant" when the system of

systems is in place. Whether or not his vision is true, it is compelling because of his position and the increasing importance and power of the Joint Requirements Oversight Council he chairs.⁷ It is important, therefore, that the Department of the Navy have a clearly articulated vision of its future warfighting concepts as an integral part of a Joint Task Force (JTF).

A second view of the RMA is that it is embodied in the emergence of Information Warfare (IW). An operational view of this type of warfare is a major focus on the capability to protect the effective and continuous operation of one's own information systems and to degrade, destroy, or disrupt the functioning of the opponent's systems. Some argue that in "fourth generation" warfare conventional forces will be made vulnerable or even irrelevant by non-state opponents using information strategies and terrorist tactics.⁸ A problem with IW is that, while it is the aspect of warfare which may become increasingly dominant, it is the most difficult to forecast accurately.⁹

Some writers on RMA make a cogent argument that in order to cope with the increasing dominance of the information aspect of warfare, military organizations need to emulate the successful businesses of today by becoming more open, with increased lateral vice horizontal cooperation. Hierarchy and centralized decision making need to be minimized, the chain of command shortened, and authority delegated as much as possible.¹⁰ This has some important implications for command and control and leadership at the operational level.

Operational Maneuver From the Sea

The Naval Service White Papers "...From the Sea" and "Forward...From the Sea" set the strategic direction for the Naval Services into the 21st Century. They directed a new approach to naval operations, placing emphasis on littoral operations and the development of "maneuver from the sea, the equivalent of maneuver warfare on land."¹¹ In response to this, the Marine Corps developed OMFTS which is defined as a concept for the projection of power ashore. It is based on maneuver warfare doctrine which is described as a warfighting philosophy that seeks to shatter the enemy's cohesion through a series of rapid, violent, and unexpected actions which create a turbulent and rapidly deteriorating situation with which he cannot cope.¹² OMFTS includes nine general principles which guide its application to:

Focus on the strategic objective. Tactical objectives and techniques are merely tools. The focus on the objective ensures optimum use of power projection at any level of conflict.

Treat the sea as maneuver space. The sea is a highway of unparalleled mobility, and the tactical mission of penetrating the littorals normally pales in comparison to the operational opportunities of maneuver from the sea.

Create overwhelming tempo. Apply sustainable force to a critical vulnerability faster than the enemy can counter. Seize and maintain the initiative. Use operational surprise.

Generate momentum. Rapid and uninterrupted concentration of combat power

at decisive points supported by complementary actions that fix, confuse or neutralize the enemy. Maneuver and fires must be closely integrated, swift, and violent. The enemy must continually face dilemmas and a tempo of operations that deny him control of the battle. Our actions are proactive and focused while the enemy is kept reactive and ineffective.

Apply strength against weakness. Project combat power through gaps, located or created, in defenses. Gaps may be geographical, capability (night fighting, C2, etc.), sustainability, or morale, or any other weakness we can decisively exploit.

Integrate all assets in accomplishing the mission. A Naval Expeditionary force with a single commander focusing all available power on a single mission for the duration of the operation.

Rely on intelligence to drive planning, option selection and maneuver execution. Timely collection, analysis, and rapid dissemination of information are required to exploit its benefits.

Key on advanced operations in deceiving the enemy, determining his disposition, attacking his critical vulnerabilities. They are executed specifically to find or create gaps to be exploited.

Emphasize flexibility, providing a wide array of options at all levels.¹³

OMFTS is also described as the application of maneuver warfare to a maritime campaign, relying on Naval Expeditionary Forces (NEF) to achieve objectives on land either completely from a sea base or through landing forces ashore.¹⁴ NEF's can be

built around a Carrier Battle Group and an Amphibious Ready Group or they can be sized and shaped differently as they are task organized for the mission. Many see the NEF as a new concept for the organization of naval forces. A good argument is made, however, that they are comparable to the coupling of carrier, amphibious, and logistics task forces of the Pacific campaigns of World War II. This may have represented a true revolution in naval warfare, changing from the fleet engagement in line of battle to a combined arms campaign of maneuver warfare which focused on strategic objectives, bypassed strong points, and attacked critical vulnerabilities.¹⁵

The primary difference between OMFTS and current amphibious warfare doctrine lies in the concepts of the sea as a maneuver space and of ship-to-objective maneuver. Instead of viewing the sea as a transit medium to a point where operations can begin ashore, OMFTS forces begin maneuvering at sea. They conduct seamless and continuous vice phased operations. The battlefield is viewed as multi-dimensional rather than linear, exposing gaps and critical vulnerabilities which may obviate the need for extensive pre-assault operations, and large support infrastructures ashore. Command and control may remain afloat, eliminating the need for redundant systems ashore and enhancing unity of command.

OMFTS and the Revolution in Military Affairs.

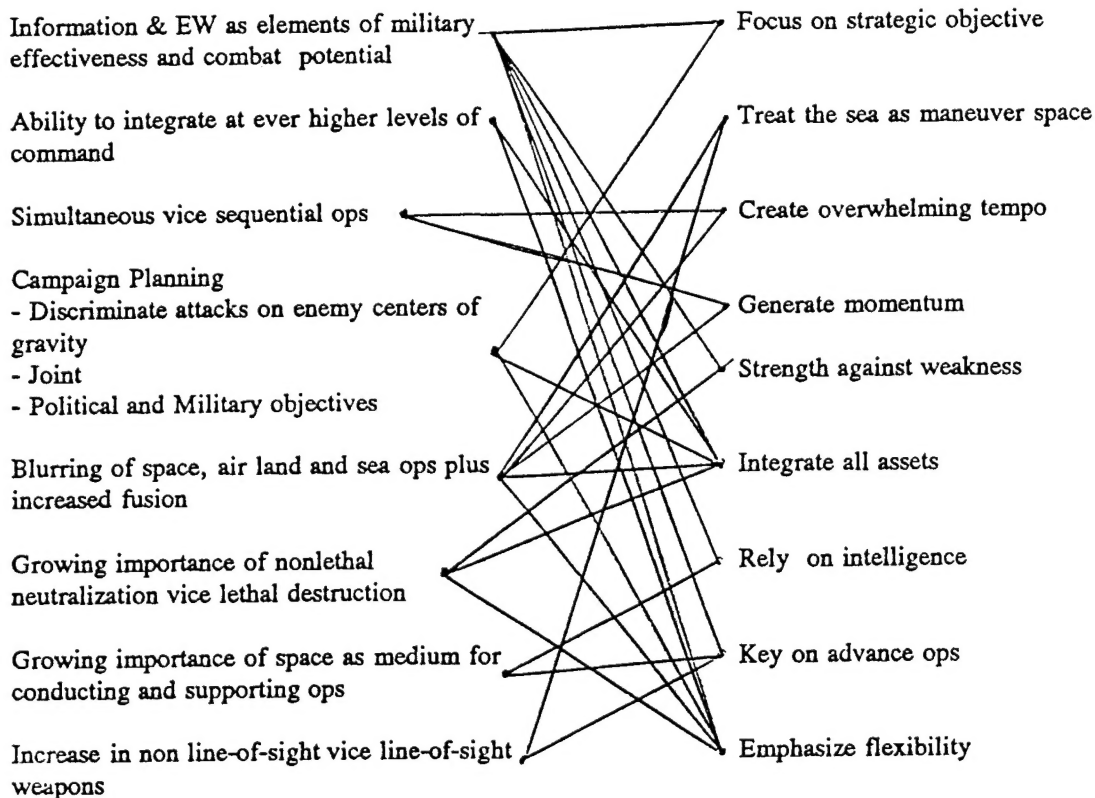
It is important that OMFTS be viewed as a way of thinking for the employment of NEFs at the operational level of war. Seen in this light, OMFTS matches up very well with the idea of a RMA as a revolution in information, sensing and precision

strike technologies.

The nine principles of OMFTS provide excellent ways in which new technologies can be leveraged to dramatically enhance the NEF commander's ability to wage war at the operational level. One Office of the Secretary of Defense, Net Assessment, view of likely operations that a RMA will emphasize matches well with the principles of OMFTS.

Likely RMA Ops Emphasis¹⁶

Principles of OMFTS



Another comparison can be drawn between the operational view of RMA offered by Cooper and some of the principles of OMFTS.

RMA Operations¹⁷

A parallel series of synchronized, integrated operations conducted at high tempo, with high lethality and high mobility, throughout the depth and extent of the theater, intended to force the rapid collapse of the enemy's military power and his will

OMFTS Principles

Focus on strategic objectives
Create overwhelming tempo
Generate momentum
Apply Strength against weakness
Integrate all assets

It seems clear that technologies associated with RMA will give the NEF commander an unprecedented level of battlefield awareness and capability to identify and strike targets virtually at will, and that the principles of force employment associated with OMFTS can take great advantage of those capabilities. Recent war games conducted at the Marine Corps Combat Development Command exploited RMA-associated technologies in tactics called "investation" and "infestation" to cause operational effects on the enemy's logistics and command and control.¹⁸ Investation involves the deep insertion of forces by vertical assault who then work toward the beach from the rear in conjunction with the seaborne assault. Infestation involves the insertion of numerous hunter-killer teams into the enemy's rear areas to attack logistics, fire support, and C2 capabilities to confuse and disrupt his operations. The unprecedented mobility, C2, and precision strike capabilities offered by RMA technologies show great promise in both concepts.

A briefing by the OSD RMA Task Force 5 on naval forces provides a view of how NEF's can continue to operate inside the reach of opponents which field "anti-

Navy " RMA-associated systems such as stealth cruise missiles, theater ballistic missiles (TBM) with weapons of mass destruction (WMD), and brilliant mines.¹⁹ Advancing technology in directed energy weapons promises protection against a wide variety of missile threats. Pulsed electrical energy has great potential for clearing large areas of any type of mine. An integrated reconnaissance strike targeting architecture would provide a clear tactical picture of the battlefield and real-time targeting information, and would support a concept of a sea-based arsenal of fire support platforms. These could be dispersed for protection rather than concentrating for mutual defense, yet be able to concentrate precision fires over great distances.

The increasing emphasis on the employment of joint forces and the use of space argues for the some modification of the principles of OMFTS. The aerospace medium should be incorporated along with the sea as a maneuver space, and the concept of operating jointly should be incorporated into the principle of integrating assets. Vertical assault forces are already a crucial component of the NEF. As a JTF (forward) or even JTF commander, the NEF commander must be able to incorporate the use of airborne or air-delivered forces from CONUS or adjacent land bases. Carrier air must be integrated with land-based air to control the airspace over the battlefield and influence the battle on the ground. Space is becoming increasingly important as an enabling medium for navigation, intelligence, and precision strike. The seamless integration of land, sea, air, and space operations is a critical concept for domination of the future theater of war.

How OMFTS fits into a security environment dominated by Information Warfare is less clear. Nevertheless, there are some enduring principles in the concept of maneuver warfare which will continue to apply, and some advantages offered by forces which come from the sea and are not dependent on land-based infrastructure.

Lind, et al., argue that maneuver will continue to be a significant factor in what they call "fourth generation warfare." Mass will become a disadvantage as it will be easy to target, and small, maneuverable, more agile forces will dominate.²⁰ Furthermore, identification of enemy strategic centers of gravity will be critical, since the goal becomes the internal collapse of the enemy rather than physical destruction.

The OSD Task Force 5 offers a view on the "paradox of automation," in that many of the RMA technologies rely on automated data processing which may be very vulnerable to an adversary's IW strategies.²¹ The design of automated systems must include safeguards against IW disruptions, and in considering the vulnerabilities of his own forces, the NEF commander must take IW capabilities into account.

An even more pessimistic view of war in the information age is offered by Patrick who argues that the proliferation of weapons of mass destruction (WMD) coupled with IW strategies will entail a shift away from conventional warfare, including any RMA capabilities.²² The renewal of the Non-Proliferation Treaty notwithstanding, situations such as the continued transfer of nuclear technology from Russia to states like Iran point to a seemingly unstoppable trend in the proliferation of WMD. While defensive technologies may prevent such weapons from actually

striking NEF forces, a nuclear explosion in the atmosphere is likely to have devastating effects on any command and control system. The greater dispersion offered by the concept of ship-to-objective maneuver may offer a partial answer to the problem of protection from WMD, but nuclear, biological and chemical defense systems must keep pace with the rapidly increasing danger of WMD proliferation.

For warfare in the information age, perhaps a new principle should be added to the OMFTS concept: one which includes the concept of operational protection. OMFTS as currently discussed concentrates on the offense, with little discussion of defensive measures. Operational protection, as taught at the Naval War College, aims to preserve the effectiveness of one's own forces and assets in a given theater and encompasses all measures taken to counter the enemy's actions, and to protect against natural occurrences.²³ It includes such measures as theater-wide air defense, operations security, protection from terrorist acts, and operational deception. IW strategies will probably be increasingly employed against U.S. forces and will be designed not only to disrupt our own information systems, but affect the will of our forces, government, and the people of our nation. Defense against IW and WMD capabilities must have a prominent place in any future warfighting concept, and can be effectively incorporated at the theater level using the concept of operational protection.

Organizational and Leadership Implications

Sullivan and Dubik point out some implications for operational leaders in an information-based RMA.²⁴ They will have more information available to them over an

increasingly compressed span of time. They will have to make decisions quicker and execute those decisions over greater distances and in decreasing amounts of time. They will have to orchestrate fire and maneuver under more diverse conditions, while maintaining cohesion among more dispersed units. Regular units may have to take on more of the characteristics of special forces, able to operate independently in small groups with a mix of weapons for self protection and the ability to call for massive supporting fires. This requires leaders down to the lowest possible level of command who are decisive, intelligent, independent, and skilled at creative solutions to ambiguous problems, and points to an increasing need for emphasis on mission-type and a clearly articulated commander's intent.²⁵

Implementing OMFTS

The naval services' interest in maneuver warfare as applied to naval operations is a direct result of the radical shift in emphasis caused by the end of the Cold War. ...From the Sea set the strategic direction toward a littoral rather than open ocean emphasis and toward NEF operations. The recently established Naval Doctrine Command published the seminal Naval Doctrine Publication 1 in March 1994 which describes maneuver warfare as the preferred method of fighting for naval forces.²⁶ In his 1995 posture statement, the Secretary of the Navy states:

We will prepare our naval forces for seabased operational maneuver...²⁷

Further on he states:

For the first time in the history of naval warfare, we will directly link maneuver of ships with landing force maneuver

ashore into a single, seamless fabric giving both sufficient space
for maneuver, surprise, and protection.²⁸

This is a clear indication that, at the highest policy levels, the Naval Service has embraced OMFTS as a warfighting concept. In practice, however, OMFTS is a long way from being implemented. The Navy's established concept for warfighting organization embodied in the Composite Warfare Commander (CWC) concept does not include amphibious warfare,²⁹ and does not seem to be compatible with employment of an NEF.³⁰ The most recent Navy warfighting concept, Battlespace Dominance, is an extension of the concept of Sea Control to include land areas, and does not include concepts of maneuver warfare.³¹ Both concepts of CWC and Battlespace Dominance appear to be focused at the tactical level. There is no discussion of the elements of operational art such as the strategic objective, center of gravity, critical or decisive points, and so on. Concepts for the employment of Naval forces must move beyond the tactical level of CWC and Battlespace Dominance to the level of operational art. The incorporation of operational art as the core of the Joint Military Operations curriculum at the Naval War College will encourage this movement. Derived from operational art, OMFTS, merged with CWC and Battlespace Dominance, can provide a compelling vision for Naval force employment.

While the Marine Corps has adapted maneuver warfare as its concept for fighting in FMFM-1 Warfighting, it has been slow to implement it with regard to amphibious warfare. Many seem to regard OMFTS as tied to improvements in

equipment. In the Marine Corps Concepts and Issues '95, the Commandant states:

Operational Maneuver from the Sea will couple doctrine
with technological advances in speed, mobility,
communications, and navigation to seamlessly and rapidly
exploit every weakness.³²

The danger in this implication lies in the possibility that the services may develop "programmatic doctrine" that is, doctrine which supports programming and is not necessarily reflective of how they will fight.³³ It is important, therefore, that OMFTS be clearly articulated as a warfighting concept for the NEF that is not dependent on development of certain systems, but that can leverage technological innovation to increase NEF capabilities.

As the JROC process exerts more control over the DOD budget, it is vital that the Naval Services have a clearly articulated view of the way they intend to wage war as a basis for their programmatic decisions. Once established as the warfighting doctrine for the NEF, OMFTS should be added to the current joint doctrine for amphibious warfare, Joint Pub. 3-02.

Conclusion

Whether or not there is a revolution in military affairs occurring, the Naval Services must position themselves to adapt to changes in warfare and to take advantage of the rapid pace of technological innovation. OMFTS is a warfighting concept that offers a new way of thinking about employment of a new form of naval

force organization, the NEF. Although these two concepts are evolutionary rather than revolutionary, when refined and coupled with the capabilities offered by technological innovation, the result may be revolutionary.

The coupling of OMFTS with new information technologies will mean that leaders down to the lowest level will have more span of control and less time to make decisions. Mission-type orders and commander's intent will become increasingly important at both tactical and operational levels.

The implementation of OMFTS as both Naval and Joint Doctrine needs to be accelerated. Procurement and adaptation of new technologies must be founded on a clear vision of how naval forces will fight. This is particularly important for the Navy because naval warfare is inherently high-technology, and naval systems tend to have long service lives.³⁴ Decisions made now will shape naval forces for many years to come.

General Shalikashvili, Chairman of the Joint Chiefs of Staff, has stated,

Revolutions are fickle. Once begun they have a tendency to drift into the hands of those who are willing to stoke the fires of change. We must now stay ahead of this revolution or watch our position erode.³⁵

While we cannot predict the future with certainty, we can position ourselves to meet it by combining our vision of the future battlespace with the proper concepts of operations and capabilities that will allow us to fight and win.

ENDNOTES

1. James R. FitzSimmonds and Jan M. Van Tol, "Revolutions in Military Affairs," JFQ, Spring, 1994, p. 29
2. James J. Tritten, Revolutions in Military Affairs, Paradigm Shifts, and Doctrine. Naval Doctrine Command Report, NDC 5-00-001, February 1995, p. 1
3. U. S. Navy Dept, ...From the Sea, Preparing the Naval Service for the 21st Century. Washington: 1992, p. 7
4. Andrew W. Marshall, Director, Net Assessment, Office of the Secretary of Defense, "Statement," House Armed Services Committee Subcommittee on Acquisition and Technology, Revolution in Military Affairs. Washington: May 5 1995, p. 1
5. Jeffrey R. Cooper, Another View of the Revolution in Military Affairs. Strategic Studies Institute, U. S. Army War College, Carlisle, PA: July 15, 1994, p. 30
6. William A. Owens, "The Emerging System of Systems," U. S. Naval Institute Proceedings. May 1995, pp. 35-39
7. William A. Owens, "JROC: Harnessing the Revolution in Military Affairs," JFQ. Summer, 1994, pp. 55-57
8. John J. Patrick, Reflections on the Revolution in Military Affairs. Paper for the Center for Security Strategies and Operations of TECHMATICS, Inc, Fairfax, VA: January 1995; William S. Lind, Kieth Nightengale, John F. Schmitt, Joseph W. Sutton, Gary I. Wilson, "The Changing Face of War: Into the Fourth Generation," Marine Corps Gazette. October, 1989 pp. 22-26; Alvin and Heide Toffler, War and Anti-War. (New York: Little, Brown and Co., 1993)
9. Marshall, p. 2
10. Patrick, pp. 8-11; James M. Dubik and Gordon R. Sullivan, War in the Information Age. Strategic Studies Institute (U. S. Army War College: Carlisle, PA, July 15, 1994, p. 30
11. U. S. Marine Corps, Operational Maneuver from the Sea. FMFMRP 14-21 Coordinating Draft. Quantico, VA, 31 March 1995, p. 1
12. U. S. Marine Corps, Warfighting. FMFM 1, (Washington: 1989) P.59
13. OMFTS, pp. 9-11
14. Ibid. p. 7

15. Telephone conversation with Dr. James J. Tritten, Naval Doctrine Command, Norfolk, VA, May 8, 1995
16. Jeff Barnett, Military Assistant, OSD Office of Net Assessment, The Revolution in Military Affairs, Briefing, U. S. Naval War College, Newport, RI, February 1995
17. Cooper, p. 30
18. Gary W. Anderson, "Implementing OMFTS: Infestation and Investation," Marine Corps Gazette, April 1995.
19. OSD Task Force 5 (Naval Forces), Briefing to the RMA Steering Group, The Pentagon, Washington, March 1995.
20. Lind, et al., p.23.
21. OSD Task Force 5, Slide #9.
22. Patrick, pp. 19-22.
23. Milan N. Vego, The Theater Functional Areas, draft instructional paper for Joint Military Operations course, Naval War College, Newport, RI: January 1995.
24. Sullivan and Dubik, p. 19.
25. Patrick, pp. 10-12.
26. U.S. Navy Dept., Naval Warfare, Naval Doctrinal Publication 1, Washington: 1994, p. 33.
27. U.S. Navy Dept., Department of the Navy 1995 Posture Statement, Washington: 1995, p. 7.
28. Ibid., p. 34.
29. U.S. Navy Dept., Composite Warfare Commander, NWP 10-1 (Rev. A), Washington: 1994.
30. Thomas M. Clemans, "Command and Control... From the Sea: Organization of the Naval Expeditionary Force," Unpublished research paper, U.S. Naval War College, Newport, RI: 1994.
31. D.J. Grieve and J.A. Millen, Battlespace Dominance, (Sea Control), U.S. Naval War College Instruction NWC 3229, 1 August 1994.
32. U.S. Marine Corps, Concepts and Issues '95, Washington: 1995, p. 1-2.

33. Tritten, p. 19.

34. Brad C. Hayes and Douglas C. Smith, ed., The Politics of Naval Innovation, Strategic Research Department Report 4-94, U.S. Naval War College, Newport, RI: 1994, p. 13.

35. John M Shalikasvili, "A Word From the Chairman," JFQ. Autumn/Winter 1994, p.5

BIBLIOGRAPHY

- Anderson, Gary W, "Implementing OMFTS: Infestation and Investation," Marine Corps Gazette, April 1995, PP 57-60
- Barnett, Jeff, Military Assistant, OSD Office of Net Assessment, "The Revolution In Military Affairs," Briefing, U. S. Naval War College, Newport, RI, February 1995
- Clemans, Thomas M. "Command and Control... From the Sea: Organization of the Naval Expeditionary Force," Unpublished research paper, U.S. Naval War College, Newport, RI: 1994.
- Dubik, James M. and Sullivan, Gordon R., War in the Information Age, Strategic Studies Institute, U.S. Army War College, Carlisle, PA: June 6, 1994.
- _____. Land Warfare in the 21st Century. Strategic Studies Institute, U.S. Army War College, Carlisle, PA, February 1993.
- FitzSimonds, James R., and Van Tol, Jan M., "Revolutions in Military Affairs," IFQ, Spring, 1994, pp. 24-31.
- Grieve, D. J., and Miller, J. A., Battlespace Dominance (Sea Control), U.S. Naval War College Instruction NWC 3229, 1 August 1994.
- Hayes, Brad C. And Smith, Douglas V., The Politics of Naval Innovation, Strategic Research Department, Center for Naval Warfare Studies, Research Report 4-94, U.S. Naval War College, Newport, RI: 1994.
- Hayes, Brad C. Evolution in Military Affairs. Strategic Research Department, Center for Naval Warfare Studies, Research Memorandum 1-95, U. S. Naval Warfare College, Newport, RI: 1995
- Lind, William S., Nightengale, Keith, Schmitt, John F., Sutton Joseph W., Wilson, Gary I., "The Changing Face of War: Into the Fourth Generation," Marine Corps Gazette, October 1989, pp. 22-26.
- Lind, William S., Schmitt, John F. Wilson, Gary I., "Fourth Generation Warfare: Another Look," Marine Corps Gazette, December 1994, pp. 34-37.

Marshall, Andrew W., Director, Net Assessment, Office of the Secretary of Defense, "Statement" House Armed Services Committee Subcommittee on Acquisition and Technology, Revolution in Military Affairs, May 5, 1995.

Mazaar, Michael J., The Military Technical Revolution, A Structural Framework, Final Report of the CSIS Study Group on the MTR, Center for Strategic and International Studies, (Washington: March 1993)

_____. The Revolution in Military Affairs: A Framework for Defense Planning, U.S. Army War College Fifth Annual Conference on Strategy, Strategic Studies Institute, U.S. Army War College, Carlisle, PA: June 1994.

Office of the Secretary of Defense "RMA Task Force 5 (Naval Forces), "Briefing to the RMA Steering Group" The Pentagon, Washington: March 1995.

Owens, William A. High Seas: The Naval Passage to an Uncharted World, Naval Institute Press, Annapolis, Maryland: 1995.

_____. "JROC: Harnessing the Revolution in Military Affairs," JFQ, Summer, 1994, pp. 55-57.

_____. "The Emerging System of Systems," U.S. Naval Institute Proceedings, May 1995, pp. 35-39.

Patrick, John J., Reflections on the Revolution in Military Affairs, Paper for the Center for Security Strategies and Operations of TECHMATICS, inc., Fairfax, VA: January 1995.

Pierce, Terry, "The Naval Expeditionary Force," U.S. Naval Institute Proceedings, November, 1993, pp. 32-35.

Robison, Norman J., "Operational Maneuver From the Sea; An Evolving Concept," Unpublished Research Paper, U.S. Naval War College, Newport, RI : 1995.

Shalikashvili, John M., "A Word From the Chairman," JFQ, Autumn/Winter 1994-95, pp.4-8.

Toffler, Alvin and Heidi, War and Anti-War: Survival at the Dawn of the 21st Century. (New York: Little, Brown and Co. 1993.)

Tritten, James J., "Revolutions in Military Affairs, Paradigm Shifts, and Doctrine." Naval Doctrine Command Report NDC 5-00-001, Norfolk, VA, February, 1995.

.Vego, Milan N., "The Theater Functional Areas",, Naval War College Draft Instructional Paper, NWC 4001, U.S. Naval War College, Newport, RI : January 1995.

_____. "Naval Operational Art" Naval War College Draft Instructional Paper, U.S. Naval War College, Newport, RI: January 1995.

U.S. Marine Corps, Concepts and Issues '95, (Washington: 1995)

U.S. Marine Corps, Warfighting, FMFM 1, (Washington: 1989)

U.S. Marine Corps, Operational Maneuver From the Sea. FMFMRP 14-21 Coordinating Draft (Quantico, VA: 31 March 1995).

U.S. Navy Dept. 1995 Posture Statement (Washington: 1995).

U.S. Navy Dept. ... From the Sea, Preparing the Naval Service for the 21st Century. (Washington: 1992).

U.S. Navy Dept. Forward. . . From the Sea (Washington: 1994).

U.S. Navy Dept. Naval Warfare. NDP-1 (Washington: 1994).

U.S. Navy Dept. Composite Warfare Commander. NWP 10-1 (Rev A) (Washington: 1994).